

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

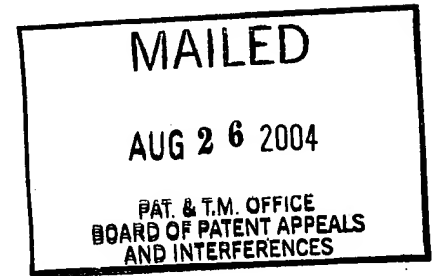
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte THOMAS NOSKER, RICHARD RENFREE,  
JAMES KERSTEIN and LOUIS SIMON

Appeal No. 2004-1750  
Application No. 09/985,937

ON BRIEF



Before FRANKFORT, MCQUADE, and NASE, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 3, 4, 8, 9, 13 through 20, 24, 25 and 27 through 34. Claim 21 stands allowed. Claims 23 and 26, the only other claims remaining in the application, have been objected to for being dependent upon a rejected base claim, but have also been indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any

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intervening claims. Claims 2, 5, 6, 7, 10 through 12 and 22 have been canceled.

Appellants' invention relates to a plastic or plastic composite railroad tie provided with a particular form of textured surface so as to resist sliding in the ballast of a railroad bed, and to methods of using such a tie. Claims 1, 24 and 25 are representative of the subject matter on appeal and a copy of those claims can be found in the Appendix to appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Garber	1,297,828	Mar. 18, 1919
Reis	2,051,619	Aug. 18, 1936
Nosker et al. (Nosker '932)	5,916,932	Jun. 29, 1999

Claims 24 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Garber.

Claims 1, 3, 4, 8, 9, 13 through 20, 24, 25 and 27 through 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nosker '932 in view of Reis.

Rather than attempt to reiterate the examiner's commentary with respect to the above-noted rejections and the conflicting viewpoints advanced by the examiner and appellants regarding those rejections, we make reference to the examiner's answer (Paper No. 17, mailed October 30, 2003) for the reasoning in support of the rejections, and to appellants' brief (Paper No. 16, filed September 29, 2003) for the arguments thereagainst.

#### OPINION

In reaching our decision in this appeal, we have given careful consideration to appellants' specification and claims, to the applied prior art references, to the declaration of Mr. Thomas J. Nosker filed May 29, 2003 (Paper No. 11), and to the respective positions articulated by appellants and the examiner. As a consequence of our review, we have made the determinations which follow.

Turning first to the examiner's rejection of claims 24 and 25 under 35 U.S.C. § 102(b) as being anticipated by Garber, for the reasons aptly set forth by appellants in their brief (pages 3-5), we agree that Garber does not identically disclose each and

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every limitation of claims 24 and 25 on appeal. More particularly, while it is true that Garber discloses a method of providing a weight bearing support surface for railroad rails and a method of maintaining desired spacing between railroad rails, wherein each method comprises attaching rails to at least one railroad tie, we note that the railroad ties seen in Garber are clearly not of the particular type and construction set forth in appellants' claim 1 on appeal, which tie is specifically required to be used in the method defined in claims 24 and 25 on appeal.

When establishing anticipation under 35 U.S.C. § 102, all limitations recited in a claim must be considered and the examiner must show where each and every feature of the claimed invention is described in the allegedly anticipatory reference. Like appellants, we note that the examiner may not arbitrarily decide that some claim limitations or features can simply be ignored, as has happened in the present application. Since Garber does not disclose or teach, either expressly or inherently, each and every limitation of appellants' claims 24 and 25 on appeal, it follows that the examiner's rejection of those claims under 35 U.S.C. § 102(b) will not be sustained.

Regarding the examiner's rejection of claims 1, 3, 4, 8, 9, 13 through 20, 24, 25 and 27 through 34 under 35 U.S.C. § 103(a) as being unpatentable over Nosker '932 in view of Reis, we note that Nosker '932 discloses use of polymeric materials for making railroad ties and, more specifically, use of a composition containing high-density polyethylene (HDPE), polystyrene (PS) and a coated fiber component consisting of fiberglass fibers coated with a thermoplastic polymer such as polypropylene (PP), polystyrene (PS) or HDPE (col. 4, line 40 - col. 5, line 43). What Nosker '932 lacks is any teaching or suggestion of a railroad tie having an arrangement of concave shapes in at least one surface thereof, as recited in the claims on appeal. To account for this difference, we look to Reis, noting that this patent discloses a railroad tie used in track construction wherein the ties each have a series of concave shaped recesses (9) formed in the bottom surface thereof, which recesses serve to provide for "greater grip of the tie body to the foundation, or road-bed, due to the suction effect produced by the employment of such recesses" (page 1, col. 2, lines 46-51).

After considering the collective teachings of the applied patents, we agree with the examiner that it would have been

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obvious to one of ordinary skill in the art at the time of appellants' invention to provide a railroad tie like that disclosed in Nosker '932 with a series of concave shaped recesses (9) formed in the bottom surface thereof, which recesses will serve to provide for greater grip of the tie body to the foundation, or road-bed, as suggested in Reis. Alternatively, we also find ample suggestion for concluding that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to modify the ties of Reis by making such ties of a polymeric material like that disclosed in Nosker '932 so as to gain the many advantages of a tie formed of such a composite building material (see, Nosker '932, col. 3, lines 32-57; col. 4, lines 6-20; and col. 7, lines 27-66). Further motivation for this combination is expressly found in Nosker '932 in the paragraphs spanning columns 3 and 4 of the patent, wherein it is noted that ties formed of the polymeric composite building material of Nosker '932 are a desirable substitute for both traditional creosote treated wood ties and steel reinforced concrete railroad ties (e.g., like the concrete ties shown in Reis).

With further regard to the requirements in appellants' independent claim 1 concerning the particular configuration of the concave shapes, i.e., that they be either in the form of a truncated cone or of a truncated pyramidal shape in which the sides of the cone or pyramidal shape are at an angle of 30-60 degrees with respect to the side of the tie in which the concave shapes are formed, and that the concave shapes have a depth of "at least 1/8 of an inch," we are of the opinion that, a careful review of drawing Figures 2 and 3 of Reis would have been suggestive to one of ordinary skill in the art of 1) recesses of a truncated pyramidal shape in which the sides of the pyramidal shape are at an angle in the range of 30-60 degrees with respect to the side of the railroad tie, and 2) such concave shaped recesses having a depth of "at least 1/8 of an inch." As for appellants' concern that the specification of the Reis patent does not provide an express description of the angle of inclination of the walls of the recesses (9) and does not suggest that the drawings are drawn to scale, we direct attention to Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), wherein the Court specifically noted that "drawings alone may provide a 'written description' of an invention as required by § 112," and to In re Aslanian, 590 F.2d

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911, 913, 200 USPQ 500, 502 (CCPA 1979) wherein it is noted that drawings must be evaluated for what they reasonably disclose and would have suggested to one of ordinary skill in the art.

We have also evaluated the declaration under 37 CFR § 1.132 provided by Mr. Thomas J. Nosker, however, when we weigh all of the evidence before us, we are nonetheless of the view that the examiner's rejection of claims 1 and 4 on appeal under 35 U.S.C. § 103(a) should be sustained. The first full paragraph on page 2 of the declaration evidences a single tie push test comparison between appellants' claimed tie and what are apparently conventional wood and concrete ties, i.e., ties without a pattern of recesses formed therein. However, we note that appellants did not select samples of concrete ties made in accordance with the teachings of Reis for testing, which ties would appear to us to be the closest prior art to the subject matter set forth in the claims on appeal. Reis clearly teaches that railroad ties with recesses (9) like those seen in Figures 2 and 3 of that patent provide greater grip of the tie body to the foundation, or road-bed. Since appellants did not select the closest prior art for comparison, we consider that appellants' secondary evidence is entitled to little weight in our overall determination of



obviousness under 35 U.S.C. § 103. In that regard, we also note that it is well settled that the expectation of some advantage or improvement recognized in the prior art generally provides one of the strongest rationales justifying a combination of prior art references. See In re Sernaker, 702 F.2d 989, 994-995, 217 USPQ 1, 5-6 (Fed. Cir. 1983).

As for the polymeric components and compositions set forth in claims 17 through 20 on appeal, these are suggested in Nosker '932 at column 4, line 40 to column 5, line 43, and thus, the examiner's rejection of those claims under 35 U.S.C. § 103(a) based on the collective teachings of Nosker '932 and Reis will also be sustained.

However, we find no basis for the examiner's position with regard to claims 3, 8, 9, 13 through 16 and 27 through 34 on appeal. Nothing in either Nosker '932 or Reis suggests concave shapes in the form of truncated cones in which the sides of the cones are at an angle of 30-60 degrees with respect to the side of the tie, or truncated shapes having the particular base size range, specific depth range, and center-to-center spacing required in the above-noted dependent claims. Like appellants,

we observe that absent a reasonable factual basis in the prior art applied against the claims for making a modification, the examiner is not free to fill such a void by merely urging that the absent teaching or suggestion is "a matter of common sense," or by contending that differences between the claimed subject matter and the teachings of the references are "merely matters of obvious minor variations," as the examiner has done in the present case. It is never appropriate to rely solely on an assertion of "common knowledge" or "common sense" in the art as the principal evidence upon which an obviousness rejection is based, without some clear and articulated evidentiary support in the record. See, In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). Since the examiner has not set forth any rationale as to why the particular dimensions, sizes and shapes of appellants' claimed invention can be "deemed to be equivalent to or within the bound of the general teaching of Reis" (answer, page 7), we will not sustain the examiner's rejection of claims 3, 8, 9, 13 through 16 and 27 through 34 on appeal under 35 U.S.C. § 103(a).

Concerning method claims 24 and 25 on appeal, we are of the view that the recited methods would have been obvious to one of

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ordinary skill in the art at the time of appellants' invention based on the combined teachings of Nosker '932 and Reis as generally discussed above in relation to claim 1 on appeal. Note particularly, the disclosure in Nosker '932 at column 7, line 49, to column 8, line 11, concerning maintaining desired spacing between railroad rails attached to ties and of providing a weight bearing support for rails attached to ties that can bear a vertical static load of at least about 39,000 lbs. We also note, given appellants' grouping of claims as set forth on page 3 of the brief, that method claims 24 and 25 will fall with claim 1 under the 35 U.S.C. § 103 rejection.

In summary, we note that the examiner's rejection of claims 24 and 25 under 35 U.S.C. § 102(b) as being anticipated by Garber has not been sustained, while the rejection of claims 1, 3, 4, 8, 9, 13 through 20, 24, 25 and 27 through 34 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Nosker '932 and Reis, has been sustained with regard to claims 1, 4, 17 through 20, 24 and 25, but not with regard to claims 3, 8, 9, 13 through 16 and 27 through 34.

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The decision of the examiner is, accordingly, affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

*Charles E. Frankfort*

CHARLES E. FRANKFORT )  
Administrative Patent Judge )

*John P. McQuade*

JOHN P. MCQUADE )  
Administrative Patent Judge )

) BOARD OF PATENT  
) APPEALS  
) AND  
) INTERFERENCES  
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JEFFREY V. NASE )  
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**APPENDIX OF CLAIMS ON APPEAL - SERIAL NO. 09/985,937**

1. A railroad tie comprising:

a railroad tie having at least four longitudinal sides, two end faces and a longitudinal axis, wherein at least one longitudinal side has an arrangement of concave shapes in the surface thereof, said shapes having a depth of at least 1/8 of an inch and having sidewalls which are at an angle of less than 90°, wherein said tie is made from polymeric material, and

said concave shapes are in the form of truncated cones in which the sides of the truncated cone shapes are at an angle of 30-60 degrees with respect to said at least one longitudinal side, or said concave shapes are truncated pyramidal shapes in which the sides of the truncated pyramidal shapes are at an angle of 30-60 degrees with respect to said at least one longitudinal side.

3. A railroad tie according to claim 1, wherein said concave shapes are in the form of truncated cones.

4. A railroad tie according to claim 1, wherein said concave shapes are truncated pyramidal shapes.

8. A railroad tie according to claim 3, wherein the concave shapes at their base have a relative diameter of 3/4 - 2 inches.

9. A railroad tie according to claim 4, wherein the concave shapes at their base have a relative diameter of 3/4 - 2 inches.

13. A railroad tie according to claim 3, wherein the concave shapes have a depth of 1/4 - 1/2 inches.

14. A railroad tie according to claim 4, wherein the concave shapes have a depth of  $\frac{1}{4}$  -  $\frac{1}{2}$  inches.

15. A railroad tie according to claim 8, wherein the concave shapes have a depth of  $\frac{1}{4}$  -  $\frac{1}{2}$  inches.

16. A railroad tie according to claim 9, wherein the concave shapes have a depth of  $\frac{1}{4}$  -  $\frac{1}{2}$  inches.

17. A railroad tie according to claim 1, wherein said tie is formed from a material comprising a polymeric component selected from polyolefins, polystyrene, rubber and mixtures thereof, and optionally a filler component selected from fiber glass, mineral fillers, wood fibers, steel fibers and mixtures thereof.

18. A railroad tie according to claim 17, wherein said polymer component contains HDPE.

19. A railroad tie according to claim 17, wherein said tie contains: (1) HDPE and fiberglass; (2) HDPE, polystyrene and fiberglass; (3) HDPE, polypropylene and fiber glass; (4) HDPE and talc and/or gypsum; (5) HDPE, rubber, mineral filler and fiber glass; (6) HDPE, polypropylene and wood fiber; (7) HDPE and wood fiber or (8) HDPE, polystyrene, and wood fiber.

20. A railroad tie according to claim 1, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

24. In a method of maintaining desired spacing between railroad rails comprising attaching said rails to at least one railroad tie, the improvement wherein said at least one railroad tie is in accordance with claim 1.

25. In a method of providing a weight bearing support surface for railroad rails comprising attaching said rails to at least one railroad tie, the improvement wherein said at least one railroad tie is in accordance with claim 1.

27. A railroad tie according to claim 15, wherein the sides of the truncated cone shapes are at an angle of 40-50 degrees with respect to said at least one longitudinal side.

28. A railroad tie according to claim 16, wherein the sides of the truncated pyramidal shapes are at an angle of 40-50 degrees with respect to said at least one longitudinal side.

29. A railroad tie according to claim 15, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

30. A railroad tie according to claim 16, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

31. A railroad tie according to claim 27, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least



90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

32. A railroad tie according to claim 28, wherein said tie is formed from a plastic composite material comprising 20-50 wt% of a polystyrene component and 50-80 wt% of a polyolefin component, and said polystyrene component contains at least 90 wt% polystyrene and said polyolefin component contains at least 75 wt% high density polyethylene.

33. A railroad tie according to claim 15, wherein the distance from the center of one concave shape to the center of an adjacent concave shape is 1 ½ to 2 ½ inches.

34. A railroad tie according to claim 16, wherein the distance from the center of one concave shape to the center of an adjacent concave shape is 1 ½ to 2 ½ inches.